CONFIDENCE INTERVAL EXPLANANTION

In working with numbers that have been gathered on changing populations (for example, children with disabilities who are served in special education in particular school year), it is helpful to remember that the reported values are more accurately thought of as estimates due to the variations in the population. To account for the fact that the numbers are estimates, statisticians use "confidence intervals" which set lower and upper bounds around a "point estimate."

In comparing the summary statements data to the state targets and state results for the current year, we have used a 90% confidence interval. The 90% confidence interval identifies the range of values most likely to include the program's true value on the summary statement. Using a range to describe the program's performance as opposed to a single number provides a more stable and reliable way of describing the programs performance relative to the state target and state results.

- *FOR EXAMPLE: If program A has 100 children exiting and 50% of those children do not make greater than expected growth in their acquisition of knowledge and skills, we are more concerned about that program than a program that has 2 children exiting with one child who made greater than expected growth and one child who did not.*

Having a range around a percentage does not mean that the percentage is not valid. Rather, it is a function of the number of children served by the program. Programs that serve very few children will always have a wide interval around their results. This does not mean that the assessments completed on those children are not valid, nor does it mean that the programs are not providing high quality services. It *only* means that we would expect the results combined across children to vary from year to year.

The information provided by ongoing assessments of preschool children can be used to make child and program level decisions. The state encourages users of the online assessment system to use the reports provided by those systems both at the program and child level to drive instruction, inform IEP development in writing measurable goals and objectives and to assess program quality. Resources and supports are available to the field through the POMS Technical Assistance Consultant.

The use of a confidence interval around the child outcomes data allows the state to rule out differences between the child outcomes data and the target that are not statistically significant. If the upper bound of the 90% confidence interval around the child outcomes data is at or above the target, than the target is considered to be met.

- *FOR EXAMPLE: The target for Summary Statement 1, Outcome A was 63.6%. The Summary Statement measured value (the point estimate) was 75.6%, but the 90% confidence limit indicates the true value could be as high as 78.5%. Since 63.6% is lower than the upper bounds for the Summary Statement, the state can be considered to have met its target.*

IN SUMMARY:

The use of a confidence interval helps communities better understand the data.

- It helps them understand that if there are a small number of children reported - how they should interpret and use the data.
- It helps them understands their data in relation to the state target and the state data. The state data is based on a large number of children whereas district data is based on smaller numbers. Percentages calculated on small numbers of children are very sensitive to changes/variations in the population not as much of a measure of program quality. This is why school districts with small numbers of children can look so different from year to year.
    - *FOR EXAMPLE: 50% of 2 children is very different than 50% of 100 children.*
- It does not mean that the data are not valid – the data are still valuable. If you have 4 children and 1 does not succeed you still want to look at the data to determine why that child did not succeed and what can be done to improve programs and services to inform instruction.